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Engineering *Bacillus subtilis* for Production of Antimalaria Artemisinin and Anticancer Paclitaxel Precursors

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Stellingen

Behorende bij het proefschrift

Engineering *Bacillus subtilis* for Production of Antimalaria Artemisinin and Anticancer Paclitaxel Precursors

van Hegar Pramastya

1. Plasmid stability clearly affects the MEP pathway genes expression in *B. subtilis*, which eventually influences terpenoids production (this thesis)
2. Terpenoid bacterial cell factory requires multivariable optimization ranging from protein expression to medium components (this thesis).
3. More vector, promoter, and regulator tools are required to support fine tuning of gene expression benefiting higher production of secondary metabolites (this thesis).
4. Heterologous gene expression of a terpenoid pathway facilitates non-native terpenoid production in microbes (this thesis).
5. Green fluorescent protein, now, is not only fused to a protein for studying its localization but also for increasing its expression as exemplified by amorphaadiene synthase expression in *B. subtilis* (this thesis).
6. High fidelity DNA polymerase enables the construction of a large size gene cluster/ operon independent of restriction and ligation enzymes (this thesis).
7. It is probably the era where the smaller is the better: even a “factory” now has taken its shape in a form of bacteria.
8. Human brain has driven the world to a better place, but it is his heart that makes it beautiful and long lasting.
9. Everything is the cause of itself (Ralph Waldo Emerson)
10. The duty of the man who investigates the writings of scientists, if learning the truth is his goal, is to make himself an enemy of all that he reads, and ... attack it from every side. He should also suspect himself as he performs his critical examination of it, so that he may avoid falling into either prejudice or leniency (Ibn Al Haytham/ Alhazen)
11. The nobility of knowledge is such that, whoever it is attributed to, even in an insignificant amount, is joyful; and whoever it is withheld from, is distraught (Al Shafi'i)